

## TWO NEW SPECIES OF LIPPIA

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### LIPPIA CULMENICOLA Moldenke, sp. nov.

Arbor; foliis inter anthesin parvissimis ca. 1 cm. longis 4 mm. latis ellipticis utrinque pilosulis ad apicem et basin acutis, supra mediam pauciserratis; capitulis numerosis brevissime pedunculatis; pedunculis filiformibus 4--8 mm. longis puberulis; capitulis parvis 5--10 mm. latis, 5 mm. longis; bracteolis purpureis pilosulis.

Tree, to 7 m. tall, practically leafless during anthesis; branches numerous, very twiggy, light-gray, glabrous; twigs numerous, slender, gray, glabrous, somewhat tetragonal and sulcate; nodes not annulate; principal internodes abbreviated, 1--3.5 cm. long; leaves decussate-opposite, very small and probably immature during anthesis, inconspicuous, hidden in the dense inflorescences, elliptic, about 1 cm. long and 4 mm. wide, acute at the apex and base, with a few appressed antrorse teeth along the upper margins above the middle, pilosulous on both surfaces; inflorescence axillary, clustered, conspicuous during anthesis, sometimes on very much abbreviated twiglets at each axil; peduncles filiform, 4--8 mm. long, puberulent; heads small, subglobose or flattened, about 5 mm. long, 5--10 mm. wide during anthesis; bractlets ovate, 3--5 mm. long, about 3 mm. wide, subacute at the apex, purplish-green when fresh, decidedly purple when dry, pilosulous; flowers included by the bractlets.

The type of this distinctive species was collected by Rogers McVaugh (no. 23036) on summits of the driest hills near the ocean between Barra de Navidad and Playa de Cuastecomate, Jalisco, Mexico, in a tropical deciduous forest with Forchammeria, Astronium, and Bursera, at an elevation of 50 meters above sea-level, on March 16, 1965, and is deposited in the herbarium of the University of Michigan. The collector notes that the species was "occasional".

### LIPPIA MICHOACANA Moldenke, sp. nov.

Arborescens; foliis inter anthesin parvis usque ad 1.5 cm. longis 1 cm. latis obovate-subrotundatis supra sparsissime pilosis, subtus in venis venisque principalibus dense pilosis apicem versus paucidentatis; inflorescentiis axillaribus numerosis, capitulis breviter pedunculatis subglobosis 1.5--2 cm. latis; bracteolis viridulo-albis pilosis ciliolatis.

Treelike, to 6 m. tall; branches and branchlets very twiggy, glabrate, gray; twigs tetragonal, more or less scattered-pilose with elongate hairs; leaves decussate-opposite, small at time of anthesis, very short-petiolate or sessile; petioles filiform, to 1 mm. long, densely hirsutulous; leaf-blades obovate-subrotund, to 1.5 cm. long and 1 cm. wide during anthesis, rather uniformly

green on both surfaces, mostly rounded or retuse at the apex, acute or subacute at the base, usually with a very few rounded and appressed teeth at the apex, very sparsely scattered-pilose above, densely pilose on the larger veins beneath; inflorescence axillary, numerous; peduncles filiform, 5--15 mm. long, rather densely hirsute with long antrorsely spreading hairs; heads subglobose, about 1 cm. long, 1.5--2 cm. wide; bractlets ovate, greenish-white during anthesis and when dry, acute or subacute at the apex, pilose and ciliate; flowers included, inconspicuous; corolla greenish-white.

The type of this species was collected by Rogers McVaugh (no. 22869) on hills in a deciduous forest ("now nearly leafless") along the road to Aguililla, 15--25 km. south of Rio Tepalcatepec bridge, which is about 30 km. southwest of Apatzingán, Michoacán, Mexico, with Bursera, Ipomoea, and various legumes, at 350--450 meters altitude, on March 7, 1965, and is deposited in the herbarium of the University of Michigan.

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### BOOK REVIEWS

Alma L. Moldenke

"Organization and Evolution in Plants" by C. W. Wardlaw, xiii & 499 pp., illus. Longmans, Green & Company, Ltd., London W.1 1965. 60 sh.

This is a very thoughtful, logical treatment of these important and interrelated topics in plants. In fact, the author treats evolution as "essentially a progressive elaboration of organization" and primary organization in any vascular plant as the "integrated action of three main groups of factors": (1) those determining the inception of primary organogenic patterns in meristems, (2) those contributing to the elaboration of maturing regions, (3) specific genetical and other factors determining the sequential syntheses of enzymes, hormones, etc. He describes fully and critically such various theories of organization as: holistic, morphological, physiological, physical and mathematical, protoplasmic, genetical, and integrative.

Listing here the ten principles of organization that the author develops will indicate the approach of this book:

1. Organization involves energy and substances so interrelated and structurally evolved as to constitute viable functional systems, capable of self-maintenance and of being transmitted in heredity.
2. The unit of biological organization and heredity is the embryonic cell of nucleus, organelles, or their precursors.
3. Both chemical and physical attributes of metabolic processes make distinctive contributions to organization.